



SHOTCRETE PRECONSTRUCTION MEETING AGENDA

APPENDIX B2

SHOTCRETE PRECONSTRUCTION MEETING AGENDA

PROJECT: _____	DATE: _____
ADDRESS: _____	PERMIT NUMBER:
_____	_____
GENERAL CONTRACTOR:	JOB PHONE:
_____	_____
PROJECT SUPERINTENDENT:	CONCRETE SUPPLIER:
_____	_____
RESTEEL PLACER:	MIX NUMBER:
_____	_____
CONCRETE PLACING SUB:	APPROVALS:
_____	_____
STRUCTURAL ENGINEER:	CONCRETE STRENGTH:
_____	_____
SHOTCRETE CONTRACTOR:	CEMENT CONTENT:
_____	_____
MIX INSPECTION AGENCY:	COB Representative:
_____	_____

SCOPE OF WORK: (size, quantity and reinforcing of typical and worst case)

- 1. WALLS:**
- ☐ Below grade exterior retaining walls
 - ☐ Top down construction

- ☐ Interior/exterior shear walls added to an existing/new building
☐ Other _____

Typical: Thickness of walls: _____
 Single/double curtain: _____
 Single curtain located where in wall? _____
 Describe reinforcing including footing/floor/wall/column/ceiling/etc dowels:

Worst Case: Thickness of walls: _____
 Single/double curtain _____
 Single curtain located where in wall? _____

Non contact laps are specified. Laps should be a minimum of 2" and not more than 6" apart. Where bars have to be tied together they should be tied so that from the nozzler's viewpoint only one bar is visible.

Wire chairs ("spiders") or open-legged plastic chairs should be used, no dobies, no heavy plastic chairs (lawn furniture) with angled legs and cross braces.

Describe reinforcing including footing/floor/wall/column/ceiling/etc dowels:

Clearances: Inside face: _____ Outside face: _____

Questions:

Where floor or ceiling dowels are projecting into the path of the nozzler and crew, can the dowels be placed upside down and cast with the slab so the tails protrude into the wall above?

Or can the tails of the dowels that protrude into the path of the nozzler be tied together ("teepeed") so there are clear spaces for the nozzler to access the wall?

2. COLUMNS/PILASTERS, BEAMS/CORBELS, FOOTINGS/SLABS:

NOTE: Scope of work information is to include ties and stirrups, all embedded items such as weld plates, plumbing, mechanical, electrical, etc.

3. BACK FORM

Back form consists of:

☐ Earth ☐ Lagging ☐ Temporary Shotcrete ☐ CMU ☐ Clay Brick ☐ Clay tile
☐ Wood ☐ Other: _____

Is a mechanical bond required between the form and the shotcrete? ☐ YES ☐ NO
If "YES" does the form have to be wetted or saturated prior to placing shotcrete?

If "No" how will form be sealed off?

NOTE: Non contact laps are specified. Laps should be a minimum of 2" and not more than 6" apart. Where bars have to be tied together they should be tied so that from the nozzle's viewpoint only one bar is visible.

Wire chairs ("spiders") or open-legged plastic chairs should be used, no dobies, no heavy plastic chairs (lawn furniture) with angled legs and cross braces.

4. APPROXIMATE CUBIC YARDAGE OF SHOTCRETE WORK:

WALLS: _____ COLUMNS: _____ BEAMS: _____
CORBELS: _____ FOOTINGS: _____ SLABS: _____

MAXIMUM YARDAGE PER PUMP AND PLACING CREW PER 8 HOUR SHIFT: _____
Estimated start date of work: _____

THE MOST DIFFICULT PART OF THIS WORK IS: _____

5. QUALIFICATIONS:

Structural engineer of record has designed or approved these members and areas for shotcrete: Yes _____ No _____

Shotcrete contractor's recent completed project(s) acceptable to the structural engineer(s) of record and the building official:

NOZZLER(S) AND BLOW PIPE OPERATOR(S) PROPOSED FOR THIS PROJECT:

Nozzlers

Blow Pipe Operators

Preconstruction test panel required for nozzle/blow pipe operator qualifications (number and size of panels, location of panels if other than jobsite):

When:

Where:

7. SPECIAL REINFORCING STEEL REQUIREMENTS:

Items must be more securely fastened for shotcrete than for traditionally placed concrete. The shotcrete crew will refuse to place shotcrete in any area where loose rebar or embedded items are discovered. The special inspector will test every area to assure no movement will occur during shotcrete placement. (Forms must be tight and unyielding also.)

It is the general contractor's responsibility to schedule so that (a) the ironworkers have finished placing and securing the reinforcing steel and (b) the shotcrete contractor has placed the guide wires and (c) the special inspector has approved it all, prior to the scheduled start of shotcreting.

NOTE: OVERSPRAY MUST BE BLOWN OFF STEEL WHILE CONCRETE IS PLASTIC WHERE CONSTRUCTION OR COLD JOINTS OCCUR. IF OVERSPRAY IS ALLOWED TO HARDEN IT MUST BE REMOVED BEFORE SUBSEQUENT SHOTCRETE PLACEMENTS.

NOTE: NO ONE IS PERMITTED TO CLIMB ON OR OTHERWISE DISTURB THE REINFORCING STEEL DURING OR AFTER SHOTCRETE PLACEMENT. IF VIBRATIONS ARE DETECTED IN THE REBAR OR FORMS, WORK WILL STOPPED UNTIL THE PROBLEM HAS BEEN ELIMINATED.

7. DEGREE OF DIFFICULTY:

- a) Overhead or above shoulder height shooting required? _____
- b) Shotcrete to be placed under up to existing floor? _____
- c) Birds mouth procedure to be used? _____
- d) Water migrating in or around shotcrete placement must be diverted until shotcrete has achieved it's final set.
- e) ACCESSIBILITY/CONDITIONS – Nozzler must have a reasonably smooth flat surface to stand on. Area in front of wall should not be used to store materials or equipment. Scaffolding should allow for interim levels of planking. Conditions for this job:

8. CURING PROCEDURES: _____

9. TESTS REQUIRED:

CORES FROM IN-PLACE SHOTCRETE: A minimum of three sacrificial steel locations for each day shotcrete is placed. More locations may be required if additional nozzlers are utilized. Contractor must be able to locate sacrificial steel intersections precisely after the shotcrete is placed. Cores shall be 4" diameter and pass through all steel but not through the cover concrete, waterproof membrane or form. Cores should not be cut until the shotcrete has been in place for 48 hours.

- a) Work stopped until in-place cores are evaluated? _____

NOTE: WHERE CORES ARE REQUIRED FROM IN-PLACE WORK AS PART OF THE SHOTCRETE QUALIFICATION PROCEDURE, NO ADDITIONAL SHOTCRETE SHALL BE PLACED UNTIL APPROVAL IS GIVEN BY THE STRUCTURAL ENGINEER OF RECORD AND THE BUILDING OFFICIAL.

- b) Engineer's approval is required for areas where sacrificial steel can be located and cores taken. Is middle of the wall horizontally and three feet from any return or opening acceptable? _____

- c) Compression strength tests are required for each 50 cubic yards of shotcrete or portion thereof placed each day from each shotcrete mix. These tests may be from the in-place work or from strength test panels (not the same as the preconstruction panels for nozzlers qualification.) Panel size shall be nominal 12" x 12" x 6" or _____.

10. OTHER ISSUES: _____

11. TOP DOWN SHOTCRETE ISSUES:

- a) Open cut restrictions: _____
- b) Horizontal construction joints must be sloped so that the back (earth) side is lower than the front (inside) face of the wall.
- c) Only clean, sandy, free draining soils may be used to form horizontal construction joints. If the Naturally occurring soils are not clean, sandy soils, clean, damp sand

will be imported and placed a minimum of one inch thick on top of the existing soil at the joint.

- d) Final configuration of the earth surface at the horizontal construction joint will be checked and repaired by hand approximately 10 feet in front of the nozzleman as he works down the wall. This will be done by: _____
- e) Under no circumstance will shotcrete be placed on a muddy or dusty soil base or a soil or sand base that has not been hand tamped to a tight, uniform consistency. This soil has to support fresh shotcrete without moving and breaking the bond between the shotcrete and the resteel.
- f) A horizontal, impervious joint backing material such a drainage fabric or tar paper must be located at the horizontal construction joints and must extend about one foot above and below the joints. This allows power washing of the joint without displacing the soil behind the joint.
- g) After excavation, horizontal construction joints (soffets) will be cleaned of all dirt, mud, rocks (more than 1.5" in diameter, roots or other organic material by power washing and/or air pressure and/or hand scraping and brushing.
- h) Any soffet area which does not slop down with the lowest part in the back (earth face) will be chipped and contoured by hand to the proper configuration.
- i) Blow pipe operators will keep the air stream away from unprotected earth surfaces and make every effort not to blow dirt into the shotcrete as it is being placed. Any area known or suspected of including dirt will be removed and reshot.
- j) Excavator, Special Inspector and Shotcrete Crew will pay special attention to spacing of the reinforcing steel to assure the horizontal construction joints occur between the grid pattern so every horizontal bar is completely encapsulated in concrete in one lift.
- k) The minimum length of wall that will be complete prior to the shotcrete contractor starting work is: _____. The special inspector will notify the City of Bellevue if there is not compliance with this minimum.
- l) Adequate work bench is necessary for proper footing for nozzleman. Flat, firm work area extending 6 feet from wall is best. Loose soil and/or a sloped or cluttered work surface can prevent the nozzleman from maintaining proper nozzling techniques.

Shotcrete works best where the pump can be situated within 200 feet of the application area. Pumping shotcrete over 300 feet is not recommended since it can adversely affect the consistency of the shotcrete.